



- **Suitable for test bodies with a mass of 4.5 kg to 70 kg and a speed up to 16 m/s**
- **Flexible use with highly variable positioning of the individual components**
- **Second impact possibility with second test body**
- **Exchanging test bodies is fast and easy**
- **Test body impact on the airbag can be either free moving or guided**
- **Laser target acquisition integrated in test body**
- **Built-in sensor system to measure force and acceleration**
- **Standardized user control for data capture and test stand control**
- **Release of airbags synchronized by software (accuracy better than 1ms)**

## Technical Specifications

### Impact speed of test body

Weight of test body between 4.5 kg and 25 kg	max. $16 \pm 0,2$ m/s
Weight of test body between 4.5 kg and 25 kg	max. $12 \pm 0,1$ m/s
Weight of test body between 25 kg and 35 kg	max. $12 \pm 0,1$ m/s
Weight of test body between 35 kg and 70 kg	max. $9 \pm 0,1$ m/s
Displacement of test body during acceleration	$50^1 - 400$ mm
Impact accuracy of test body	$\pm 10$ mm

### Travel ranges:

Motorized length setting	approx. 340 – 2,490 mm
Motorized height setting	approx. 490 – 1,700 mm

### Swivel range:

Angle of rotation about the cylinder's Y-axis (motorized)	$\pm 20^\circ$
Angle of rotation about the cylinder's Z-axis (manual)	$\pm 10^\circ$
Test stand dimensions (LxWxH)	$5,200^2 \times 3,000 \times 2,200$ mm

<sup>1</sup> Minimum value not reachable at every mass or speed

<sup>2</sup> customized length of test system available, length not below 5,200mm (204")

## Description

The horizontal airbag test system essentially consists of two modules, the acceleration unit for the test bodies and an airbag holder for the greatest variety of types and sizes of airbags. This device enables one or two test bodies to be accelerated hydraulically and either guided or allowed to fly freely into an airbag or any other type of structure desired. To measure acceleration reliably in the forward direction, each test body is fitted with two acceleration sensors. During airbag testing, four force sensors at the airbag holder record the forces acting on the airbag. In addition to measurements of force and acceleration, the displacement and speed of the test bodies can also be measured in both the forward and backward directions (rear impact analysis). Since two bodies can be used, meaningful tests can also be carried out for front and rear passengers using large airbags. In addition to airbag testing, this equipment enables tests conforming to ECE-R12 to be carried out.

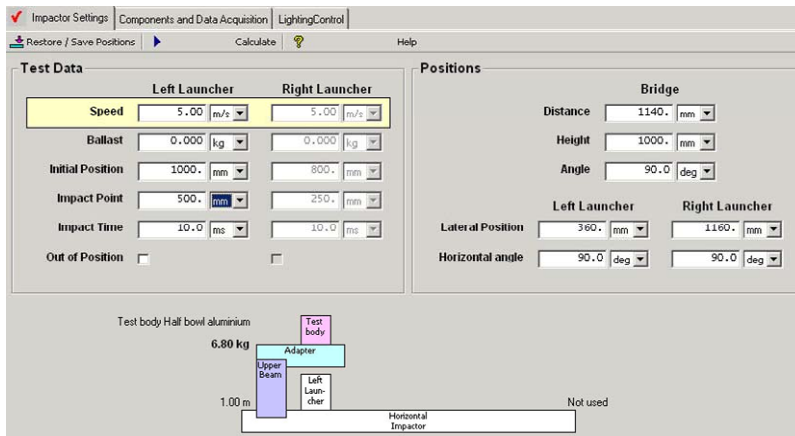
## Software

This software was designed especially for the horizontal airbag test system. It is based on CrashSoft<sup>®3</sup> which is already working successfully in complex crash test facilities. The software protects the operator from operating errors as far as possible, but gives him free access to the test system parameters.

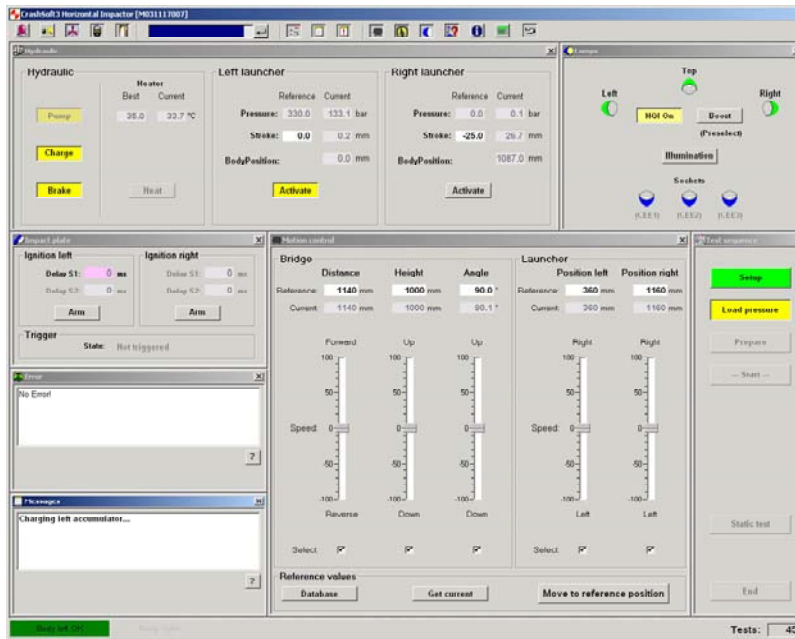
The characteristic features of CrashSoft<sup>®3</sup> such as extensive test preparation, test execution and evaluation are implemented for the horizontal airbag test system in a similar manner to the CrashSoft<sup>®3</sup> facility control.

The unique unit control edit and view fields enable the displayed units to be changed using a pull down menu. If a numeric value has already been entered, then the displayed value is converted automatically.

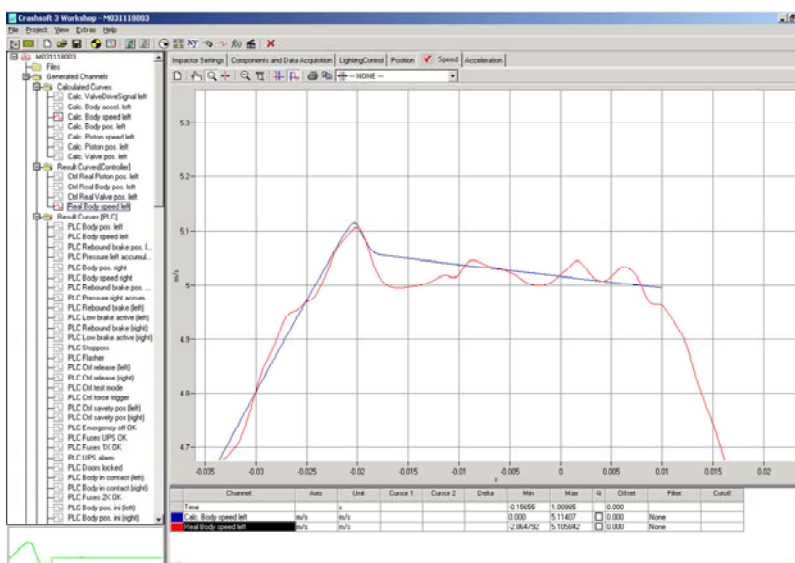
As has been customary for the MESSRING facility control for many years, the peripheral equipment like air extraction, lighting and video are operated and displayed via user interface.



Test preparation, input interface for test system parameters



Display of test system state during test execution



Display of selected test parameters in quickview

## Examples of Test Bodies

---



*Test body head*



*Structure for adaptation of free moving head*



*Test body hemisphere*